Chapter 4

Choose one correct answer:

1. The mass (in grams) of $FeSO_4 \cdot 7H_2O$ required for preparation of 125 mL of 0.90 M solution is:

    (a) 16 g

    (b) 25 g

    (c) 13 g

    (d) 31 g

    (e) 43 g

2. How many mL of 17 M NH_3 must be diluted to 500.0 mL to make a 0.75 M solution?

    (a) 13 mL

    (b) 22 mL

    (c) 39 mL

    (d) 73 mL

    (e) none of these

3. Which of the following sets of directions correctly describes the preparation of 1.00 L of 0.250 M NaOH from a 12.5 M stock solution?

    a) Dilute 0.0200 L of 12.5 M NaOH to a volume of 1.00 L.

    b) Dilute 12.5 mL of 12.5 M NaOH to a volume of 1.00 L.

    c) Combine 0.200 L of 12.5 M NaOH with 1.00 L of water.

    d) Dilute 310 mL of 12.5 M NaOH to a volume of 1.00 L.

4. How many grams of $Ca(OH)_2$ are contained in 1500 mL of 0.0250 M $Ca(OH)_2$ solution?

    (a) 3.17 g

    (b) 2.78 g

    (c) 1.85 g

    (d) 2.34 g

    (e) 4.25 g

5. What is the concentration of a solution prepared by diluting 25.0 mL of a stock 0.188 M $Ca(NO_3)_2$ solution to 150.0 mL?

    a) 1.13 M

    b) 0.0313 M

    c) 0.0887 M

    d) 0.0199 M

6. How many moles of solute are required to make 250. mL of a 3.00 M aqueous NaCl solution?

    a) 0.750 moles

    b) 3 moles

    c) 0.250 moles

    d) 750 moles

7. Calculate the molarity of a NaOH solution if 26.7 mL of 0.10 M HCl is required to completely neutralize 25.0 mL of the NaOH solution.

    a) 9.4 M

    b) 0.10 M

    c) 0.11 M

    d) 0.093 M

8. What volume of 12.6 M HCl must be added to enough water to prepare 5.00 liters of 3.00 M HCl?

    (a) 1.19 L

    (b) 21.0 L

    (c) 0.840 L

    (d) 7.56 L

    (e) 2.14 L